



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,808	09/17/2002	Larry Halliwell	148/302	2451

7590

08/24/2005

W Thad Adams III
Adams Schwartz & Evans
2180 Two Wachovia Center
301 S Tryon Street
Charlotte, NC 28282

EXAMINER

CHIN, BRAD Y

ART UNIT

PAPER NUMBER

1744

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/088,808

Applicant(s)

HALLIWELL ET AL.

Examiner

Brad Y. Chin

Art Unit

1744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 34 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant fails to provide proper antecedent basis for "the water soluble organic acid" and "the corresponding water soluble salt of the organic acid".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 12, 14, 16, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Illouze [U.S. Patent No. 3,502,485].

Regarding claim 12, Illouze teaches a sterilizing block for use in an airspace within a container (See col. 2, lines 46-51 – fumigation within bags or wrappers enclosing plant products may be induced by any solid chemical substance...allowing the evaporation of a chemical gas), comprising: a sterilizing composition comprising a sulphur dioxide activating compound wherein moisture absorbed by the block reacts with the sulphur dioxide activating compound to form sulphur dioxide (See col. 2, lines 46-51; See col. 3, lines 8-10); a water-soluble organic acid

Art Unit: 1744

(See col. 3, lines 44-48 and lines 63-70); and a corresponding water soluble salt of the organic acid (See col. 3, lines 71-75).

Regarding claim 14, Illouze teaches the sterilizing block, wherein the water-soluble organic acid comprises 1 to 3 carboxylic acid groups (See col. 3, lines 44-48 and lines 63-70), and the corresponding salt is selected from the group consisting of a magnesium salt, a sodium salt, and a potassium salt (See col. 3, lines 71-75).

Regarding claim 16, Illouze teaches the sterilizing block, wherein sulphur dioxide activating compound is metabisulphite (See col. 2, lines 52-55).

Regarding claim 17, Illouze teaches the sterilizing block, wherein the metabisulphite is selected from the group consisting of sodium metabisulphite or potassium metabisulphite (See col. 2, lines 52-55).

3. Claims 19, 23-24, and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Steele et. al. [WO 94/10233].

Regarding claim 19, Steele et. al. teach a sterilizing block for use in an airspace within a container (See page 2, lines 33-35 – polymeric film material for use in the packaging of produce), comprising: a sterilizing composition comprising a sulphur dioxide activating compound wherein moisture absorbed by the block reacts with the sulphur dioxide activating compound to form sulphur dioxide (See page 3, lines 1-10 – sulphur dioxide-liberating compound(s)); and a hygroscopic compound (See page 3, lines 1-10 – hygroscopic compound(s)).

Regarding claim 23, Steele et. al. teach the sterilizing block, wherein the sulphur dioxide activating compound is metabisulphite (See page 3, lines 11-20 – sodium metabisulphite).

Art Unit: 1744

Regarding claim 24, Steele et. al. teach the sterilizing block, wherein the metabisulphite is selected from the group consisting of sodium metabisulphite and potassium metabisulphite (See page 3, lines 11-20 – sodium metabisulphite).

Regarding claim 33, Steele et. al. teach the method of sterilizing an airspace within a container (See page 2, line 33 to page 3, line 10), comprising the steps of: providing a sterilizing composition comprising a sulphur dioxide activating compound wherein moisture absorbed by the block reacts with the sulphur dioxide activating compound to form sulphur dioxide (See page 3, lines 1-10 – sulphur dioxide-liberating compound(s)); and a hygroscopic compound (See page 3, lines 1-10 – hygroscopic compound(s)); forming the sterilizing composition into a block (See page 6, lines 14-20); and placing the block into the container, the airspace within which is to be sterilized (See page 6, lines 21-26).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Illouze, as applied above in paragraph 2.

Illouze teaches the sterilizing block as described above in paragraph 2, and further teaches that the water soluble organic acid comprises 2-5 percent by weight of the total weight of the sterilizing composition (See col. 4, lines 6-7). Illouze fails to specifically teach that the corresponding water-soluble salt of the organic acid comprises 2-5 percent by weight of the total weight of the sterilizing composition. It would have been obvious to one of ordinary skill in the art at the time the invention was made, without undue experimentation, to provide acids for use as auxiliary agents in combination with the fumigating composition, as taught by Illouze, where the corresponding water soluble salt of the organic acid comprises 2-5 percent by weight of the total weight of the sterilizing composition because Illouze further teaches that the acids could be used alone or in various combinations, such as in the form of salts of alkali or alkali-earth metals, preferably sodium, potassium, or calcium salts (See col. 3, lines 73-75), where the amounts of the acids may range between 0.001 to 5 percent of the weight of the products (See col. 4, lines 6-7).

Art Unit: 1744

5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Illouze, as applied above in paragraph 2, and further in view of Czarniecki et. al. [U.S. Patent No. 4,857,301].

Illouze teaches the sterilizing block as described above in paragraph 2, but fails to teach the sterilizing block, wherein the block is selected from the group consisting of a solid gel block, a tablet of consolidated powder and a tablet of consolidated granules. Czarniecki et. al. teach the formation or preparation of solid forms of chemical compounds, which take the form of powders, tablets, dispersible granules, capsules, cachets, and suppositories. Czarniecki et. al. further teach that in the tablet form, the active compound is mixed with the carrier having the necessary binding properties in suitable proportions and compacted in the shape and size desired (See col. 9, lines 25-36). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the sterilizing block, comprising the composition, as described in Illouze, into a block form consisting of a tablet of consolidated powder or consolidated granules because Illouze teaches that the chemical substance is provided in solid form, where a tablet comprising the sterilizing composition of Illouze could have been used to induce the fumigation of plants, where the composition includes constituents to assist with the release of sulfur dioxide from its solid form.

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Illouze, as applied above in paragraph 2, and further in view of Wellinghoff et. al. [U.S. Patent No. 6,046,243].

Illouze teaches the sterilizing block as described above in paragraph 2, but fails to teach the sterilizing block, wherein the container is a diaper pail or medical hazardous waste disposal container. Wellinghoff et. al. teach a biocidal composition, which comprises a hydrophilic sulfur

Art Unit: 1744

dioxide activating compound to generate sulfur dioxide, for sterilizing/killing microbials within medical or biological waste containers (See col. 9, lines 24-40; See col. 27, lines 11-28). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wellingshoff et. al. and Illouze for providing the sterilizing block, as taught by Illouze, for sterilizing a medical hazardous waste disposal container, as taught in Wellingshoff et. al. because, as acknowledged by Applicants (See Specification, page 1, lines 8-11) and as taught by both references, sulfur dioxide activating compounds are well known for sterilizing containers, where the sterilizing block composition of Illouze provides a biocidal composition which could be used for sterilizing/killing microbials in containers containing medical hazardous waste.

7. Claims 20 and 21 are rejected under 35 U.S.C 103(a) as being unpatentable over Steele et. al. as applied above in paragraph 3, and further in view of Crouch [U.S. Patent No. 2,686,171].

Regarding claim 20, Steele et. al. teach the sterilizing block film as described above in paragraph 3, but fail to teach that the hygroscopic compound is a hygroscopic alkylbenzene-sulphonate and the hygroscopic compound comprises 1-2.5 percent by weight of the total weight of the sterilizing composition. Crouch teaches the use of hygroscopic alkylbenzene-sulphonate for creating sulfur dioxide resin lattices. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Steele et. al. and Crouch because Steele et. al. provides the motivation for use of a suitable hygroscopic compound, such as hygroscopic alkylbenzene-sulphonate as taught by Crouch, in the formation of the sterilizing block film where the hygroscopic compound's ability to absorb moisture allows for control of the sulphur dioxide liberation rate. Additionally, without undue experimentation, one of ordinary skill would have been able to determine an appropriate amount of hygroscopic

Art Unit: 1744

compound, such as 1-2.5 percent by weight of the total weight of the sterilizing composition, for controlling a specific rate of sulphur dioxide liberation in the formation of the sterilizing block film of Steele et. al.

8. Claims 22 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steele et. al., as applied above in paragraph 3, and further in view of Czarniecki et. al.

Regarding claim 22, Steele et. al. teach the sterilizing block film as described above in paragraph 3, but fail to teach the sterilizing block, wherein the block is selected from the group consisting of a solid gel block, a tablet of consolidated powder and a tablet of consolidated granules. Czarniecki et. al. teach the formation or preparation of solid forms of chemical compounds, which take the form of powders, tablets, dispersible granules, capsules, cachets, and suppositories. Czarniecki et. al. further teach that in the tablet form, the active compound is mixed with the carrier having the necessary binding properties in suitable proportions and compacted in the shape and size desired (See col. 9, lines 25-36). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Czarniecki et. al. with the system of Steele et. al. for providing a sterilizing block film in the form of a tablet for use in packaging materials, e.g. within a container, for releasing sulfur dioxide, because Czarniecki et. al. teach the formation or preparation of solid forms of chemical compounds, which take the form of powders, tablets, dispersible granules, capsules, cachets, and suppositories, where such solid forms comprising the sterilizing composition and hygroscopic compound, as taught by Steele et. al., function to controllably release or liberate sulfur dioxide within the airspace of packaging materials for preventing enzymic and non-enzymic browning as well as growth of spoilage microorganisms.

Art Unit: 1744

Regarding claim 34, Steele et. al. and Czarniecki et. al. fail to teach that the water soluble organic acid and the corresponding water soluble salt of the organic acid each comprise 2-5 percent by weight of the total weight of the sterilizing composition. Steele et. al. provides Tables 1-7 illustrating various compositions for the polymeric sterilizing block film. It would have been obvious to one of ordinary skill in the art at the time the invention was made, without undue experimentation, to determine an appropriate amount of water soluble organic acid and the corresponding water soluble salt of the organic acid, such as each comprising 2-5 percent by weight of the total weight of the sterilizing composition, in forming an appropriate polymeric sterilizing block film, which incorporates a sulphur dioxide liberating compound, an acid component, a hygroscopic compound, and a corresponding water soluble salt.

9. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Steele et. al., as applied above in paragraph 3, and further in view of Wellinghoff et. al.

Steele et. al. teach the sterilizing block as described above in paragraph 3, but fail to teach the sterilizing block, wherein the container is a diaper pail or medical hazardous waste disposal container. Wellinghoff et. al. teach a biocidal composition, which comprises a hydrophilic sulfur dioxide activating compound to generate sulfur dioxide, for sterilizing/killing microbials within medical or biological waste containers (See col. 9, lines 24-40; See col. 27, lines 11-28). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wellinghoff et. al. and Steele et. al. for providing the sterilizing block film, as taught by Steele et. al., for sterilizing a medical hazardous waste disposal container, as taught in Wellinghoff et. al. because, as acknowledged by Applicants (See Specification, page 1, lines 8-11) and as taught by both references, sulfur dioxide activating compounds are well known for sterilizing containers [or packages], where the

Art Unit: 1744

sterilizing block composition of Steele et. al. provide a film comprising a biocidal composition which could be used for sterilizing/killing microbials in containers containing medical hazardous waste.

10. Claims 26-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Illouze in view of Czarniecki et. al.

Regarding claims 26 and 29, Illouze teaches the method of sterilizing an airspace within a container, comprising the steps of: providing a sterilizing composition comprising a sulphur dioxide activating compound wherein moisture within the container reacts with the sulphur dioxide activating compound to form sulphur dioxide (See col. 2, lines 46-51; See col. 3, lines 8-10); a water soluble organic acid (See col. 3, lines 44-48 and lines 63-70); and a corresponding water soluble salt of the organic acid (See col. 3, lines 71-75); and placing a solid chemical substance, e.g. block, into the container, the airspace within which is to be sterilized (See col. 2, lines 46-51). Illouze fails to teach the step of forming the sterilizing composition into a block. Czarniecki et. al. teach the step of forming or preparing solid forms of chemical compounds, which take the form of powders, tablets, dispersible granules, capsules, cachets, and suppositories. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Czarniecki et. al. with the method, as taught by Illouze, because Czarniecki et. al. provides the step for forming a solid chemical substance, such as a tablet of the chemical composition, that is placed into the bag or wrapper, wherein the airspace within is sterilized by the sulfur dioxide composition, as taught by Illouze.

Regarding claim 27, Illouze further teaches that the water soluble organic acid comprise 2-5 percent by weight of the total weight of the sterilizing composition (See col. 4, lines 6-7). Illouze and Czarniecki et. al. fail to specifically teach that the corresponding water-soluble salt of

Art Unit: 1744

the organic acid comprises 2-5 percent by weight of the total weight of the sterilizing composition. It would have been obvious to one of ordinary skill in the art at the time the invention was made, without undue experimentation, to provide for acids for use as auxiliary agents in combination with the fumigating composition, where the corresponding water soluble salt of the organic acid comprises 2-5 percent by weight of the total weight of the sterilizing composition because Illouze further teaches that the acids could be used alone or in various combinations, such as in the form of salts of alkali or alkali-earth metals, preferably sodium, potassium, or calcium salts (See col. 3, lines 73-75), where the amounts of the acids may range between 0.001 to 5 percent of the weight of the products (See col. 4, lines 6-7).

Regarding claim 28, Illouze teaches the sterilizing block, wherein the water-soluble organic acid comprises 1 to 3 carboxylic acid groups (See col. 3, lines 44-48 and lines 63-70), and the corresponding salt is selected from the group consisting of a magnesium salt, a sodium salt, and a potassium salt (See col. 3, lines 71-75).

Regarding claim 30, Illouze teaches the sterilizing block, wherein sulphur dioxide activating compound is metabisulphite (See col. 2, lines 52-55).

Regarding claim 31, Illouze teaches the sterilizing block, wherein the metabisulphite is selected from the group consisting of sodium metabisulphite or potassium metabisulphite (See col. 2, lines 52-55).

11. Claims 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Illouze in view of Czarniecki et. al., as applied above in paragraph 10, and further in view of Wellinghoff et. al.

Illouze in view of Czarniecki et. al. teach the method as described above in paragraph 10, but fail to teach the step of placing the block into a container, comprises the step of placing the block into a diaper pail or medical hazardous material disposal container. Wellinghoff et. al.

Art Unit: 1744

teach a biocidal composition, which comprises a hydrophilic sulfur dioxide activating compound to generate sulfur dioxide, and method for using the biocidal composition for sterilizing/killing microbials within medical or biological waste containers (See col. 9, lines 24-40; See col. 27, lines 11-28). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wellinghoff et. al. and Illouze in view of Czarniecki et. al. for providing the method, as taught by Illouze in view of Czarniecki et. al., for sterilizing a medical hazardous waste disposal container, as taught in Wellinghoff et. al. because, as acknowledged by Applicants (See Specification, page 1, lines 8-11) and as taught by both references, sulfur dioxide activating compounds are well known for sterilizing containers, where the method of sterilizing an airspace within a container with the composition, as taught by Illouze in view of Czarniecki et. al. provide the steps for forming and using a biocidal composition for sterilizing/killing microbials in containers, such as containers containing medical hazardous waste, as taught by Wellinghoff et. al.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brad Y. Chin whose telephone number is 571-272-2071. The examiner can normally be reached on Monday – Friday, 8:00 A.M. – 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sun (John) Kim, can be reached at 571-272-1142. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

Art Unit: 1744

applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

byc
August 16, 2005


JOHN KIM
SUPERVISORY PATENT EXAMINER